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## Studies on asiatic *Apophyllia*. Part 5: Revisional study of type materials and descriptions of five species new to science (Chrysomelidae: Galerucinae)

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**ABSTRACT.** The fifth contribution to the knowledge of asiatic *Apophyllia* based on the study of type materials is presented. *A. kimotoi* (from Japan), *A. sikkimensis* (from Sikkim), *A. taiwanica* (from Taiwan), *A. shuteae* (from India) and *A. bertiae* (from India and Pakistan) spp. nov. are described. *A. elschotziae elschotziae* CHEN, 1976 is redescribed. Lectotypes are designated for the following taxa: *Apophyllia javana* PIC, 1927; *Apophyllia medana* PIC, 1946; *Galerucella viridipennis* JACOBY, 1885; *Glyptolus viridis* JACOBY, 1884 and *Malaxia elongata* JACOBY, 1896. Following new synonyms are proposed: *A. javana* PIC, 1927 = *A. signatipennis* PIC, 1945 = *A. medana* PIC, 1946 = *A. viridis* (JACOBY, 1884). *A. brancuccii* MEDVEDEV, 1993 is recorded for the first time from India, Thailand, Myanmar, Laos and Vietnam, and *A. vietnamica* SAMODERZHENKOV, 1988 for the first time from Laos. Male genitalia are figured for all species studied.

**Key words:** taxonomy, new species, redescription, lectotype designation, synonymy, key, catalogue, Coleoptera, Chrysomelidae, Galerucinae, *Apophyllia*, Oriental Region

Within the five contributions dealing with the study of Asiatic *Apophyllia*, most of the primary types from 63 previously described taxa were examined (except *A. elschotziae alticola* CHEN, 1976; *A. elschotziae elscholtziae* CHEN, 1976; *A. shirozui* TAKIZAWA, 1985 and *A. thalassina* (FALDERMANN, 1835)). 21 new species were described, 6 were redescribed. Lectotypes were designated for 22 taxa. 14 new synonyms were proposed, 2 taxa were removed from synonymy. *Malaxioides grandicornis* FAIRMAIRE, 1888 was transferred to genus *Apophyllia* and *Apophyllia nila* MAULIK, 1936 was excluded from *Apophyllia* and transferred to

*Pyrrohalta* JOANNIS, 1866. At present, the asiatic fauna of the genus *Apophyllia* comprises 68 species or subspecies.

The present paper is the final contribution of this series of papers dealing with the revision of asiatic *Apophyllia* and includes the results of the study of type materials and of additional unidentified material. 5 species new to science are described below, *A. elschotziae elschotziae* Chen, 1976 is redescribed, lectotypes are designated for 5 taxa and 3 new synonyms are proposed.

The following abbreviations identify the collections housing the material examined:

- BMNH - United Kingdom, London, The Natural History Museum (Sharon SHUTE);  
BPBM - USA, Hawaii, Honolulu, Bernice P. Bishop Museum (Al SAMUELSON);  
DEGG - Germany, Giessen, Dieter ERBER collection;  
DEI - Germany, Eberswalde Finow, Deutsches Entomologisches Institut (Lothar ZERCHE);  
FKCC - Czech Republic, České Budějovice, František KANTNER collection;  
HNHM - Hungary, Budapest, Hungarian Natural History Museum (Otto MERKL);  
HTHJ - Japan, Hasuda, Haruo TAKIZAWA collection;  
ISNB - Belgium, Brussels, Institut Royal des Sciences Naturelles de Belgique (Didier DRUGMAND, Marcel CLUDTS);  
JBCB - Czech Republic, Brno, Jan BEZDĚK collection;  
JVCJ - Czech Republic, Jirkov, Jiří VOŘÍŠEK collection;  
KMNH - Japan, Fukuoka, Kyushu, Kitakyushu Museum and Institute of Natural History (Kyoichiro UEDA);  
KPVI - India, Trivandrum, Vellayani, K.D. PRATHAPAN collection;  
KUEC - Japan, Fukuoka, Kyushu University (Junichi YUKAWA);  
MMBC - Czech Republic, Brno, Moravian Museum (Jiří KOLIBÁČ);  
MCSN - Italy, Genova, Museo Civico di Storia Naturale „Giacomo Doria” (Roberto POGGI);  
MCZC - USA, Massachusetts, Cambridge, Museum of Comparative Zoology (Phillip D. PERKINS);  
MNHN - France, Paris, Muséum National d’Histoire naturelle (Nicole BERTI);  
NHMB - Switzerland, Basel, Naturhistorisches Museum (Eva SPRECHER-UEBERSAX, Michel BRANCUCCI);  
RBNN - Netherlands, Nieuwegein, Ron BEENEN collection;  
SMNS - Germany, Stuttgart, Staatliches Museum für Naturkunde (Wolfgang SCHAWALLER);  
USNM - USA, Washington D.C., National Museum of Natural History (Alexander KONSTANTINOV);  
ZMAS - Russia, St. Petersburg, Zoological Museum, Academy of Sciences (Boris A. KOROTYAEV);  
ZMHB - Germany, Berlin, Museum für Naturkunde der Humboldt-Universität (Johannes FRISCH).

When recording the label data of the type material examined, a double slash (//) divides data on different labels. The exact label data are cited for type specimens. The type localities are cited in original spelling. Other remarks and complementations of the author are found in square brackets: [p] – preceding data are printed; [h] – the same, but handwritten; [w] - white label; x/y - number of males/number of females.

### *Apophyllia asahinai* CHŪJŌ, 1962

*Apophyllia asahinai* CHŪJŌ, 1962: Philipp. J. Sci. 91: 23-26 (type locality: Musya, Taityu-syū, Formosa); CHŪJŌ, 1963: 387 (Taiwan, description of female) (partim?); KIMOTO, 1965: 489 (Taiwan) (partim?); WILCOX, 1971: 142 (partim?); KIMOTO, 1986: 56 (Taiwan) (partim?); KIMOTO, 1991: 9 (Taiwan) (partim?); KIMOTO & CHU, 1996: 54 (Taiwan) (partim?); CHŪJŌ & CHŪJŌ, 1997: 43.

*Apophyllia flavovirens*: CHŪJŌ, 1935: 174 (see CHŪJŌ, 1962: 23) (partim?); CHŪJŌ, 1938: 135 (see CHŪJŌ, 1962: 23)(partim?).

See also *A. taiwanica* n. sp.

#### TYPE MATERIAL EXAMINED

Holotype (male), labelled: „Musha [h] FORMOSA [p] 26.X.1928 [h] COL. M. CHUJO [w, p] // Holotype [red label, h] // *Apophyllia asahinai* CHŪJŌ [w, h]” (in KUEC).

#### ADDITIONAL MATERIAL EXAMINED

CHINA: Taiwan, Tungpu, Chiyai, 14.-17.vii.1976, H. TAKIZAWA leg. (2/0 in HTHJ); Taiwan, Tengpu, Nantou, 6.-8.vii.1981, H. TAKIZAWA leg. (1/0 in HTHJ).

Aedeagus as in Fig. 1.

Distribution. Endemic to Taiwan.

#### COMMENTS

*A. asahinai* was described from single male (CHŪJŌ 1962). One year later, CHŪJŌ (1963) published additional specimens as “Allotype“ and “Paratypes“. These specimens deposited now in NHMB (1 female) and in HNHM (5 specimens) are not consequently treated as type material of *A. asahinai*. Moreover, at least the males of this additional material are not conspecific with holotype and refer to *A. taiwanica* n. sp. together with most of additional material previously identified as *A. asahinai*, which I had the possibility to examine. Both species can be distinguished by the structure of aedeagus (Figs 1, 32).

### *Apophyllia brancuccii* MEDVEDEV, 1998

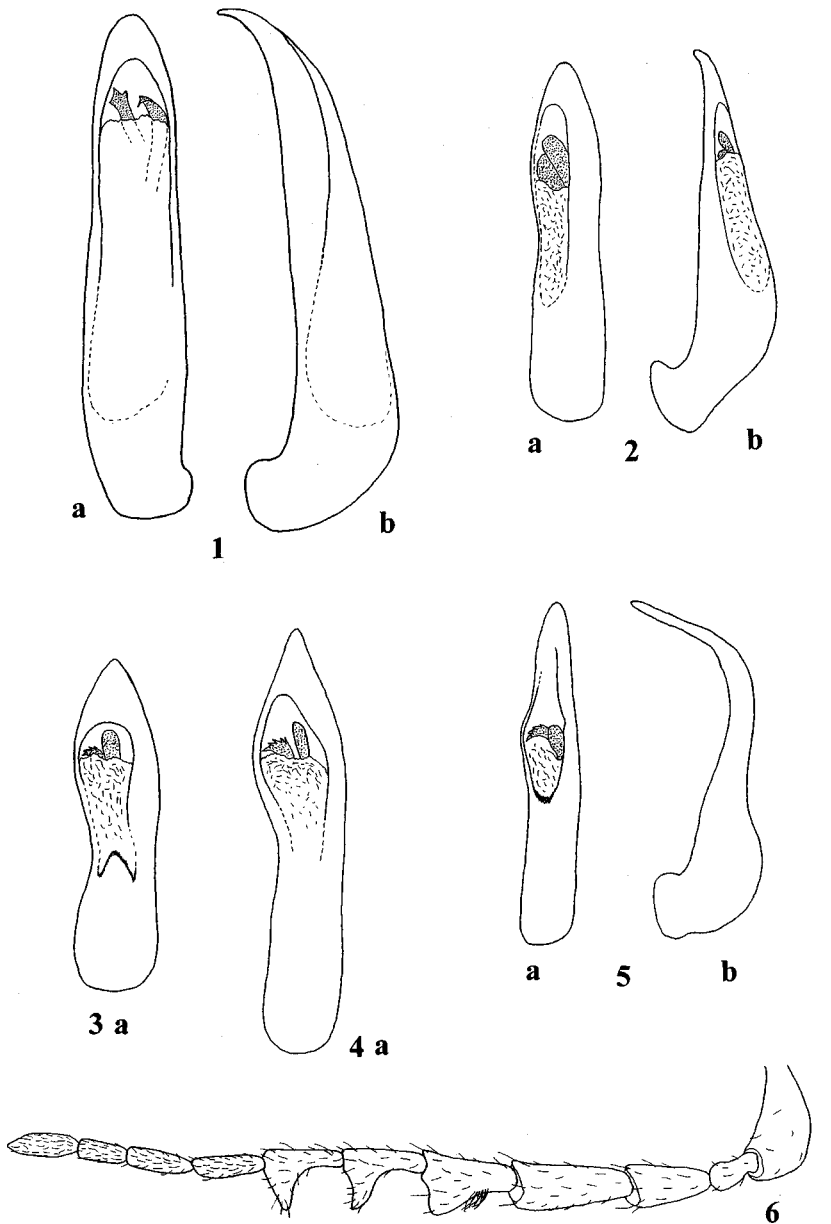
*Apophyllia brancuccii* MEDVEDEV in MEDVEDEV & SPRECHER-UEBERSAX, 1998: Spixiana, 21(1): 28 (type locality: East Nepal, Mechi, Dobhan-Phulvari); MEDVEDEV & SPRECHER-UEBERSAX, 1999: 300; MEDVEDEV, 2000: 10.

## TYPE MATERIAL EXAMINED

Holotype (male), labelled: "Dobhan – 8.VI.Phulvari 1985 800-1200 m [w, p] // E-Nepal Mechi M. Brancucci [w, p] // HOLOTYPUS [p] Apophyllia brancuccii m. [h] L.Medvedev det. 19 [p] 96 [red label, h]" (in NHMB); 8 paratypes (females), labelled: "Phalicot 13.VI.83 550m [w, p] // E-Nepal Arun V. M. Brancuccii [w, p] // PARATYPUS L. Medvedev det. 19. [red label, p]" (in NHMB); 4 paratypes (1 male and 3 females), labelled: "Hile-Arun R. 2000-300m 23.V.1983 [w, p] // E-Nepal Arun V. M. Brancucci [w, p] // PARATYPUS L. Medvedev det 19 [red label, p]" (in NHMB); 1 paratype (female), labelled: "Arun R. – Tamlingtar 26.V.83 450m [w, p] // E-Nepal Arun V. M. Brancucci [w, p] // PARATYPUS L. Medvedev det 19 [red label, p]" (in NHMB); 1 paratype (female), labelled: "Dharan 18.VI.85 [w, p] // E-Nepal Koshi M. Brancucci [w, p] // PARATYPUS L. Medvedev det 19 [red label, p]" (in NHMB).

## ADDITIONAL MATERIAL EXAMINED

NEPAL: Chitwan distr., Chitwan N.P., Sauraha, 31.v.-4.vi.1997, W. SCHAWALLER leg. (2/3 in SMNS); Annapurna Mts., Marsyangdi vall., Chamje, 1300-1500 m, 24.viii.1995, SCHMIDT leg. (3/2 in RBNN); INDIA: Kumaon, W Almora (1/0 in BMNH); Kumaon, E Ramganga V. (3/2 in BMNH); Uttar Pradesh, Kotdwara env., 1.-3.viii.1994, M. SNIŽEK leg. (1/0 in JVCJ); Dehra Dun, Kumaon Himalaya, Siwalik hills, 1940-1945 (1/0 in NHMB); Naini Tal, Bhim Tal, 609 m, viii.1961, G. SCHERER leg. (2/7 in NHMB); Kerala, Periyar lake, 900 m, 13.-20.v.1991, J. KOLIBÁČ leg. (0/4 in NHMB); Kerala, Thekkady, Periyar lac., 77°10'E 9°34'N, 900-1000 m, 19.-27.iv.1997, R. PEŠA leg. (1/0 in JVCJ); Kerala, Cardamon hills, ca 50 km NW of Pathanamthitta near Pambaiyar riv., 77°05'E 9°25'N, 300 m, Z. KEJVAL leg. (0/1 in JBCB); Tamil Nadu state, Nilgiri hills, 15 km SE of Kotagiri, Kunjappanai env., 76°56'E 11°22'N, 900 m, Z. KEJVAL & M. TRÝZNA leg. (1/1 in JBCB); Tamil Nadu state, Nilgiri hills, 11 km SE of Kotagiri, Kunjappanai env., 76°56'E 11°24'N, 1100 m, C. R. PEŠA leg. (5/2 in JBCB); Assam, Kaziranga, Mikir hills, Brahmaputra, v.1961, G. SCHERER leg. (3/8 in NHMB); THAILAND: Nan-Pha Khab, 11.-15.v.1993, PACHOLÁTKO & DEMBICKÝ leg. (0/1 in JVCJ); Loei prov., Phu Kradung N.P., 1000 m, 101°49'E 16°52'N, 16.-17.v.1999, M. ŘÍHA leg. (3/0 in JBCB); Palong, 750 m, 26.-28.v.1991, 19°55'N 99°06'E, V. KUBÁŇ leg. (6/7 in NHMB); same data, D. KRÁL leg. (2/3 in NHMB); Lansang N.P., 16°48'N 98°57'E, 18.-24.iv.1991, D. KRÁL leg. (0/4 in NHMB); Chiang Dao, 19°24'N 98°55'E, 600 m, 10.-16.v.1991, D. KRÁL leg. (1/1 in NHMB); same data, V. KUBÁŇ leg. (0/1 in NHMB); Sangklaburi, 8.-12.iv.1991, J. FARKAČ leg. (0/1 in NHMB); Nakhon Nayok Prov., Khao Yai N.P., 5.-6.vi.1965, P. D. ASHLOCK leg. (0/2 in BPBM); MYANMAR: Shwego Myo, x.1885, L. FEA leg. (1/1 in MCSN); Carin Chebá, 900-1100 m, xii.1888, L. FEA leg. (1/1 in MCSN); Momeit, DOHERTY leg. (1/0 in BMNH); LAOS: Louangnamtha prov., Namtha→Muang Sing, 101°19'E 21°09'N, 900-1200 m, 5.-31.v.1997, V. KUBÁŇ leg. (2/3 in NHMB); Hua Phan prov., Phu Loei N.P., Ban Sakok, 20°10'N



1-6. 1-5 - Aedeagus (a - dorsal view, b - lateral view): 1 - *Apophyllia asahinai*, 2 - *A. brancuccii* (Paratype, specimen from Nepal), 3 - *A. brancuccii* (specimen from India - Tamil Nadu), 4 - *A. brancuccii* (specimen from Thailand), 5 - *A. dilaticornis*, 6 - male antenna of *A. dilaticornis*. Scale 1 mm

103°12'E, 23.-26.v.2001, J. BEZDĚK leg. (1/1 in JBCB); VIETNAM: Cuc Phong N.P., 100 km N of Hanoi, 2.-12.v.1991, E. JENDEK leg. (1/5 in NHMB); Cuc Phong N. P., 21.-22.v.1996, PACHOLÁTKO & DEMBICKÝ leg. (2/6 in NHMB); Cuc Phong, 2.-11.v.1991, J. STRNAD leg. (2/3 in NHMB); Ha Son Binh prov., Hoa binh, 4.-7.vi.1986, J. HORÁK leg. (0/2 in NHMB).

Aedeagus as in Figs 2-4.

Distribution. Nepal. New records from India, Thailand, Myanmar, Laos and Vietnam.

#### COMMENTS

*A. brancuccii* was described from Nepal by MEDVEDEV (1998). I had the possibility to study numerous material of *A. brancuccii* from many SE Asia countries including the type series deposited in NHMB. The specimens are habitually identical and differ only very slightly in the structure of aedeagus, probably due to the geographical range of this species (Figs 2-4).

### *Apophylia dilaticornis* (JACOBY, 1894)

*Malaxia dilaticornis* JACOBY, 1894: Novit. Zool., 1: 314 (type locality: Timor).

*Apophylia dilaticornis*: WEISE, 1924: 183; WILCOX, 1971: 143; KIMOTO, 1990: 26.

#### TYPE MATERIAL EXAMINED

Lectotype (male), present designation labelled: „Timor [w, h] // Type. [p] 18500 [red label, h] // *Malaxia dilaticornis* Jac. [w, h]“ (in MCZC). The lectotype is provided with one red label: „LECTOTYPUS *Malaxia dilaticornis* Jacoby, 1894, des. J. Bezděk 2003”.

Aedeagus as in Fig. 5, male antenna as in Fig. 6.

Distribution. Described from Timor Isl. (Indonesia).

#### COMMENTS

JACOBY (1894) evidently described *A. dilaticornis* from several specimens of both sexes, because he mentioned the variation length of the body size and sexual dimorphism. However, I had the possibility to study only one male deposited in MCZC and designated here as the lectotype.

### *Apophylia elongata* (JACOBY, 1896)

*Malaxia elongata* JACOBY, 1896: Entomologist, 29: 8 (type locality: Loochoo Islands [by the title]).

*Apophylia elongata*: WEISE, 1924: 183; NAKANE & KIMOTO, 1959: 69 (Amami-Oshima); NAKANE & KIMOTO, 1961: 18 (Ryukyu Is.); KIMOTO, 1964a: 372; KIMOTO, 1964b: 291 (key), 292 (Ryukyu Is.); KIMOTO & GRESSITT, 1966: 476 (key), 518 (Ryukyu); Wilcox, 1971: 143; KIMOTO, 1985: 2 (Ryukyu Is.); KIMOTO & TAKIZAWA, 1994: 61 (drawing), 233 (key), 304.

## TYPE MATERIAL EXAMINED

Lectotype (female), present designation, and paralectotype (female), labelled: „Archipel Liou-Kiou Ile d'Oshima Ferrié, 1895 [w, p] // *Malaxia elongata* Jac. type [w, h]” (in ZMHB); 1 paralectotype (female), labelled: „Liu-Kiu archip. [w, h] // 2nd Jacoby Coll. [w, p] // *elongata* Jac. [w, h] // Type [p] 18497 [red label, h]” (in MCZC); 2 paralectotypes (females), labelled: „Archipel Liou-Kiou Ile d'Oshima Ferrié, 1895 [w, p] // Museum Paris R. Oberthur 1897 [w, p] // *Malaxia elongata* Jac. type [w, h]” (in MNHN). The specimens are provided with one red label: „LECTOTYPUS [or PARALECTOTYPUS] *Malaxia elongata* Jacoby, 1896, des. J. Bezděk 2002”.

## ADDITIONAL MATERIAL EXAMINED

JAPAN: Okinawa, Kadena AB at Hawaii, Makino with aircraft, 26.iii.1969 (1/0 in USNM); Okinawa, Ikehara, 25.iv.1957, A. A. HUBERT leg. (0/5 in USNM); Okinawa, Imi SW Oyama, 1.v.1956, R. I. YECLA leg. (0/7 in USNM); Okinawa, Nago, 28.iii.1964, T. TAKARA leg. (0/1 in USNM); Amami-Oshima, Yuwan, 7.-9.iv.1956, S. MIYAMOTO leg. (1/0 in KUEC); Amami-Oshima, Kagoshima, 26.iv.-5.v.1967, H. TAKIZAWA leg. (1/1 in HTHJ), Okinawa, Hyakuna, Tamagusuku, 10.iv.1979, K. KUSIGEMATI leg. (6/0 in HTHJ), CANADA: Anchorage, 9.iv.1967, in aircraft, J. F. BYRNES leg. (0/1 in USNM); Anchorage, 14.iv.1967, in aircraft, L. H. HERRING leg. (0/1 in USNM); VIETNAM: Saigon, 25.iv.1960, N. NEFF leg. (0/1 in USNM).

Aedeagus as in Fig. 7.

Distribution: Japan (Ryukyu Isl). Collected also in Canada and Vietnam in aircrafts.

***Apophyllia elschotziae alticola* CHEN in CHEN, YU, WANG & JIANG, 1976**

*Apophyllia elschotziae alticola* CHEN in CHEN, YU, WANG & JIANG, 1976: 208 (descr. in Chinese), 220 (descr. in English) (type locality: Tibet: Chayu); CHEN & JIANG, 1981: 463; CHEN & JIANG, 1987: 49 (Tibet).

## COMMENTS

No material was examined. According to the original description, *A. e. alticola* was based on four specimens deposited in the Institute of Zoology, Academia Sinica, Peking, China. *A. e. alticola* differs from *A. e. elschotziae* by less enlarged antennomeres, by extended bat-shaped black pronotal spot, and by the higher altitude of its occurrence (CHEN 1976).

***Apophyllia elschotziae elschotziae* CHEN in CHEN, YU, WANG & JIANG, 1976**

*Apophyllia elschotziae elschotziae* CHEN in CHEN, YU, WANG & JIANG, 1976: 207-208 (in Chinese), 219-220 (in English) (type locality: Tibet: Chayu); CHEN & JIANG, 1981: 462; CHEN & JIANG, 1987: 49 (Tibet).

## TYPE MATERIAL EXAMINED

The type material was not studied.

## ADDITIONAL MATERIAL EXAMINED

CHINA: SE Tibet, Rong Tö valley, 6500 ft., 23.v.1933, E. KINGDON WARD & R. J. H. KAULBACK leg. (1/0 in BMNH); SE Tibet, Zayul, Atakang, 9000 ft., 9.vi.1933, E. KINGDON WARD & R. J. H. KAULBACK leg. (1/0 in BMNH); same data, 17.vi.1933 (0/1 in BMNH); same data, 8000 ft., 17.vii.1933 (2/0 in BMNH)

## COMMENTS

The type material was not examined. According to the original description, *A. e. elschotziae* was based on 30 specimens from Tibet deposited in the Institute of Zoology, Academia Sinica, Peking, China (CHEN 1976). Unfortunately, the paper with description of *A. e. elschotziae* is written in Chinese, with very short English summary only. I have found 5 specimens of *A. e. elschotziae* within the undetermined *Apophyllia* material from BMNH and I decided to redescribe *A. e. elschotziae* as follows.

## DIAGNOSIS

*A. elschotziae elschotziae* can be distinguished from its congeners by the unique structure of antennae and by the structure of aedeagus (Fig. 8).

## REDESCRIPTION

Body flattened, parallel-sided, densely pubescent, dull.

Head black, mouthparts and clypeal margin brown. Pronotum yellow with median black spot. Scutellum and underside black. Antennomeres 1 to 8 yellowish to brownish, gradually darkened, antennomere 1 infuscate dorsally, antennomeres 9 to 11 black. Femora black, tibiae and tarsi yellow, occasionally infuscate. Elytra metallic green.

Labrum transverse, covered by 6 pale setae in row, anterior margin sinuate. Anterior part of head semiopaque, covered by microsculpture, vertex dull, coarsely and densely punctured. Interantennal space with small deep groove continuing between frontal tubercles and to vertex as gradually narrowed impunctate stripe. Frontal tubercles large, subtriangular, distinctly elevated above vertex, lustrous. Vertex densely covered by short pale hairs. Antennae robust, 0.85 times as long as the body, length ratio of antennomeres 1 to 11: 18:9:15:22:17:16:10:15:7:7:15. Antennomere 8 largely extended, antennomeres 9 and 10 very short, triangular-like.

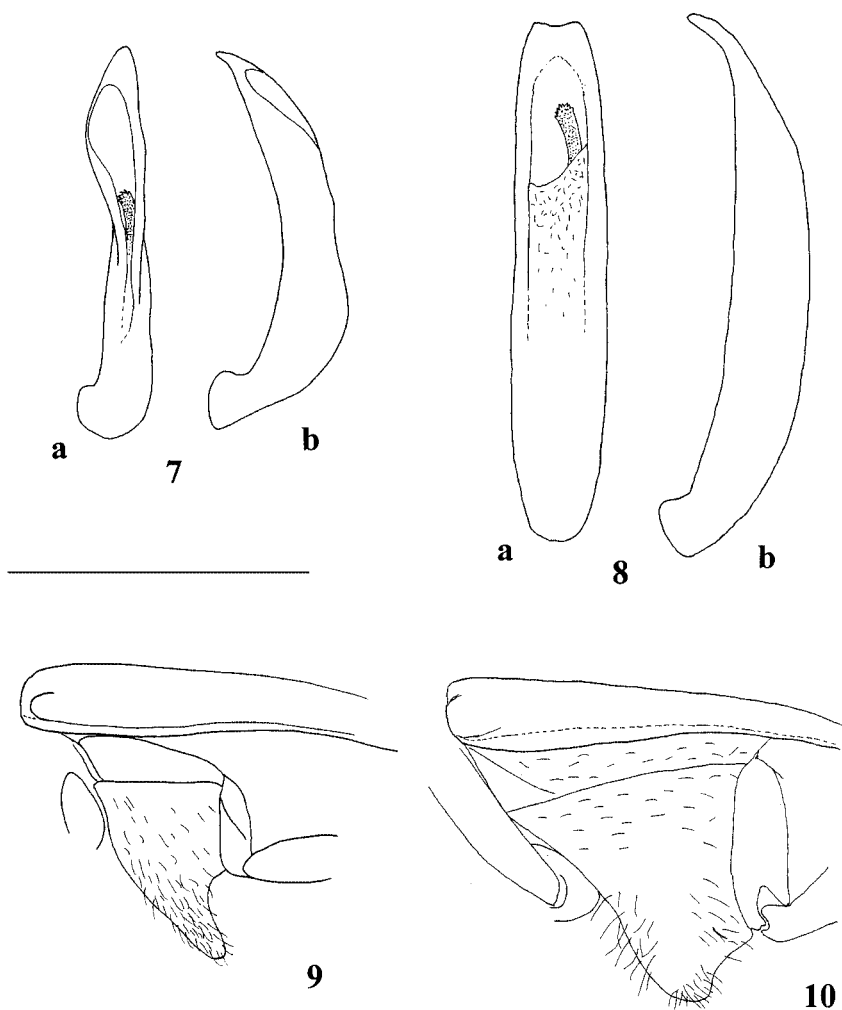
Pronotum transverse, 1.8 times as broad as long, widest at the first third, strongly narrowed posteriad, semiopaque, densely covered by coarse punctures and pale hairs. Surface with two deep transverse depressions and two small feeble depressions in the posterior corners. Anterior and posterior margins slightly sinuate, lateral margins distinctly sinuate in posterior half. All margins indis-



tinctly bordered. Anterior angles widely rounded, posterior angles rectangular, rounded. Both anterior and posterior angles with small dent directed upwards and bearing long pale seta.

Scutellum small, subtriangular, with rounded apex, covered by small dense punctures and short pale hairs, dull.

Elytra parallel, dull. Humeral calli well developed. Elytral surface very densely covered with small confused punctures and short pale hairs. Epipleura distinct, gradually narrowed to apex.



7-10. 7-8 - Aedeagus (a - dorsal view, b - lateral view): 7 - *Apophyllia elongata*, 8 - *A. elscholtziae*, 9-10 - male metasternal protuberance in lateral view: 9 - *A. maculicollis*, 10 - *A. basilaria*. Scale 1 mm

Macropterous.

Ventral surface lustrous, finely punctured and covered by pale hairs.

Basimetatarsomere 1.25 times as long as two following metatarsomeres combined.

Body length 4.65-5.95 mm.

The shape of aedeagus as in Fig. 8.

Sexual dimorphism: Male: Last visible sternite with very large semicircular incision. Claws bifid. Antennomere 8 largely extended. Female: Last visible sternite complete. Claws appendiculate. Antennomere 8 only slightly extended.

Distribution. China (Tibet).

### *Apophyllia maculicollis* (JACOBY, 1895)

*Malaxia maculicollis* JACOBY, 1895: Stett. Ent. Z., 56: 71 (type locality: New. Guinea).

*Apophyllia maculicollis*: WEISE, 1924: 183; WILCOX, 1971: 145.

#### TYPE MATERIAL EXAMINED

Lectotype (male), present designation, labelled: „N. Guinea [w, h] // 2nd Jacoby Coll. [w, p] // maculicollis Jac. [w, h] // Type [p] 18494 [red label, h] // *Malaxia maculicollis* Jacoby TYPE [w, h]“ (in MCZC). The lectotype is provided with one red label: „LECTOTYPUS *Malaxia maculicollis* Jacoby, 1895, des. J. Bezdek 2003”.

Aedeagus as in Fig. 11.

Distribution. New Guinea.

#### COMMENTS

JACOBY (1896) evidently described *A. maculicollis* from several specimens, because he mentioned the variation length of the body size in his description. However, I had the possibility to study one male deposited in MCZC and designated it as the lectotype.

JACOBY obviously overlooked male metasternum modified to small protuberance directed downwards (Fig. 9). Due to this character, *A. maculicollis* seems to be very near to *A. basilana* PIC, 1945. Both species differ in coloration of pronotum (yellow with central black spot in *A. maculicollis*, yellow or yellow with indistinct dark spot in *A. basilana*), in the structure of male metasternal protuberance (Figs 9-10) and in the structure of aedeagus (Figs 11-12).

ALLARD (1889) described *Apophyllia maculicollis* from South Africa. Later, JACOBY (1903) transferred this species into the genus *Palaeoapophyllia* JACOBY, 1903. In view of this fact, Allard's *maculicollis* and JACOBY's *maculicollis* are not congeneric. According to International Code of Zoological Nomenclature (59.2.), new name for JACOBY's *maculicollis* is not necessary.

***Apophyllia mimica* SAMODERZHENKOV, 1988**

*Apophyllia mimica* SAMODERZHENKOV, 1988: In: Faun. & Ecol. Nasek. V'etnama: 75 (key), 78-79 (type locality: Vietnam: prov. Zyalay-Kontum: Buonloy).

## TYPE MATERIAL EXAMINED

Paratype (male), labelled: „Paratypus [red label, p] // SRV, Prov. Gialai-Contum, Buon-Loi, 40 km N Ankhe [p] 27 [h]VI 198[p]3.[w, h] // *Apophyllia mimica* [h] E. Samoderzhnikov det. [w, p]” (in LMRM).

Aedeagus as in Fig. 13.

Distribution. Vietnam.

***Apophyllia thalassina* FALDERMANN, 1835**

*Auchenia? thalassina* FALDERMANN, 1835: Mém. Acad. Imp. Sci. St. Pétersbourg, II: 437-438 (type locality: Mongolia).

*Galerucella thalassina*: WEISE, 1889: 569.

*Malaxia thalapina* [sic!]: BALY, 1889: 309.

*Galerucesthis thalassina*: WEISE, 1897: 296; JACOBSON, 1903: XV.

*Apophyllia thalassina*: WEISE, 1924: 184; WINKLER, 1930: 1316; OGLOBLIN, 1936: 139 (key), 140-141 (Chita, Mandzhuria, E Mongolia, W China); WU, 1937: 887; GRESSITT & KIMOTO, 1963: 427 (key), 433 (N China, Mongolia, Korea); MEDVEDEV, 1992: 579 (key); WILCOX, 1971: 148; LOPATIN, 1975: 221; MEDVEDEV, 1982: 55 (key), 263; DUBESHKO & MEDVEDEV, 1989: 157; MEDVEDEV & DUBESHKO, 1992: 136; MOHAMEDSAID, 2000b: 368 (China).

## TYPE MATERIAL EXAMINED

The type material was not examined.

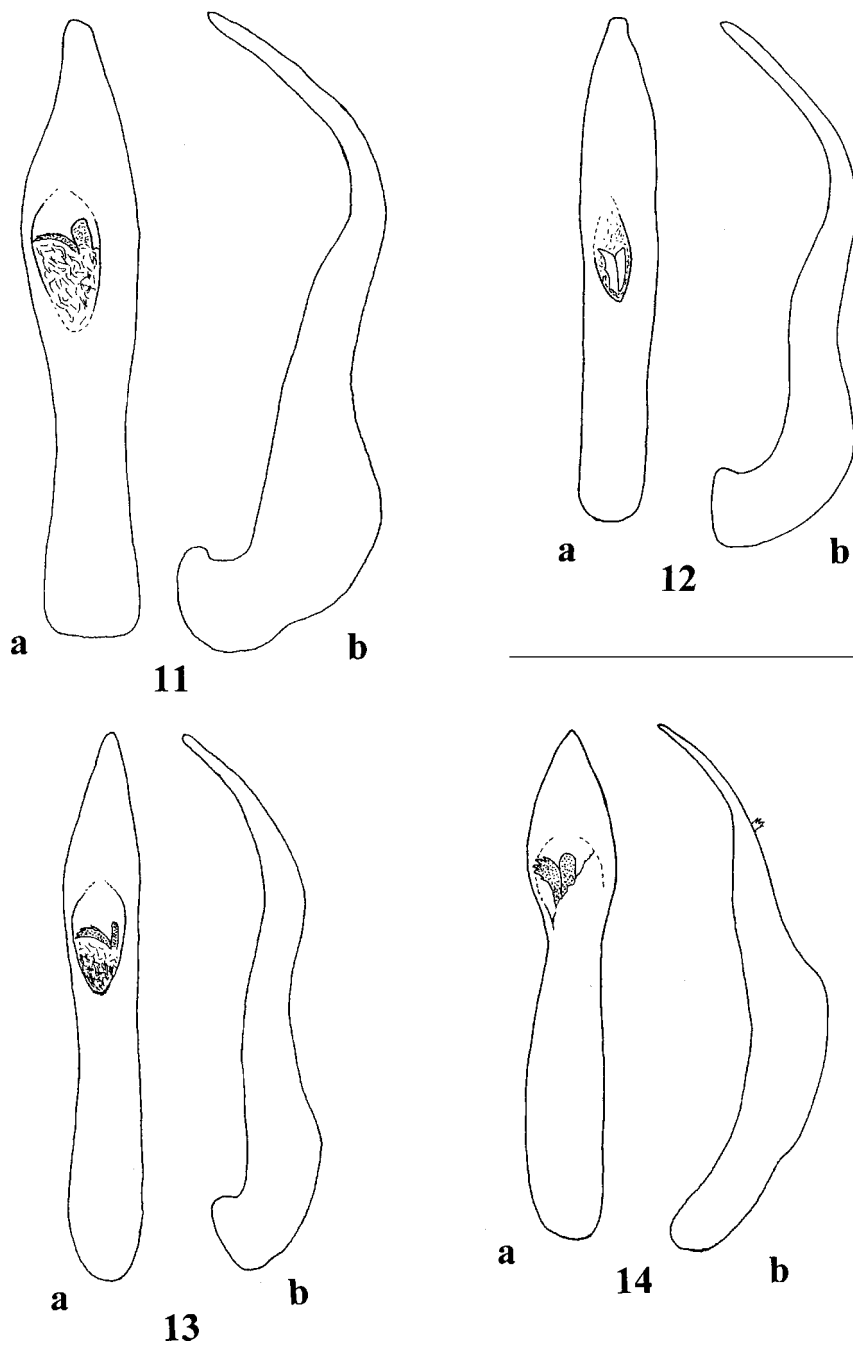
## ADDITIONAL MATERIAL EXAMINED

RUSSIA: Primorski Reg., Vladivostok env., Ryazanovka station near Slavyanka, 20.-21.vii.1991, U. HEINIG leg. (0/1 in RBNN); Slavyanka, E bank of Amur river, 24.vi.1914 (0/1 in ZMAS); Primorski Reg., Sichote-Alin Mts., Sokolchi, 1.-15.vii.1990, KADLEC & VOŘÍŠEK leg. (0/1 in JVCJ); Chita Reg., Zabaik. 5.vii.1912, GAVRILYUK leg. (0/1 in ZMAS); MONGOLIA: [unreadable], 20.vi.1893 (1/0 in ZMAS).

Distribution. Russia (Far East), Mongolia, China (?).

## COMMENTS

The type series, originally deposited in ZMAS (KOROTYAEV 2002, pers. comm.), is now in longterm loan of Dr. Hans SILFVERBERG (Finland, Helsinki) and my request for short study of loaned material remained unanswered. Unfortunately, material examined comprises only several females from Russia and one male from Mongolia (but with broken tarsi and abdomen, so the aedeagus was not studied). Most likely, some of previous records of *A. thalassina* (mainly from China) may refer to *A. grandicornis* (FAIRMAIRE, 1888). The taxonomic position of both



11-14. Aedeagus (a - dorsal view, b - lateral view): 11 - *Apophyllia maculicollis*, 12 - *A. basilana*, 13 - *A. mimica*, 14 - *A. vietnamica*. Scale 1 mm

species as well as the geographic distribution should be cleared when males *A. thalassina* are found.

***Apophyllia vietnamica* SAMODERZHENKOV, 1988**

*Apophyllia vietnamica* SAMODERZHENKOV, 1988: In: Faun. & Ecol. Nasek. V'etnama: 76 (key), 80 (type locality: Vietnam: prov. Khashonbin: Tuong'ten).

TYPE MATERIAL EXAMINED

1 paratype (male), labelled: „Paratypus [red label, p] ВЕЬТНАМ горы NW Бай–туонг у Ланг–тянь [p] 17. [h] 4.1963 г. Кабаков [w, p] // *Apophyllia vietnamica* [h] E. Samoderzhenkov det. [w, p]” (in JBCB); 1 paratype (female), labelled: “Vietnam-Ha Son Binh Thuong tien, 10 km W Kim Boi, 28.X.-13.XI. 1978, L. Medvedev leg. [w, p] // *Cordia* [w, h] // Paratypus [red label, p] // *Apophyllia vietnamica* Samoderzhenkov det. Medvedev 1988 [w, p]” (in SMNS); 1 paratype (female), labelled: “Vietnam-Ha Son Binh Thuong tien, 10 km W Kim Boi, 28.X.-13.XI. 1978, L. Medvedev leg. [w, p] // *Cordia* [w, h] // Paratypus [red label, p] // *Apophyllia vietnamica* Samoderzhenkov det. [h] L.N.Medvedev det. 19 [p] 88 [w, h]” (in SMNS); 1 paratype (female), labelled: “Paratypus [red label, p] // Vietnam-Ha Son Binh Thuong tien, 10 km W Kim Boi, 28.X.-13.XI. 1978, L. Medvedev leg. [w, p] // *Apophyllia vietnamica* [h] E. Samoderzhenkov det. [w, p]” (in HTHJ).

ADDITIONAL MATERIAL EXAMINED

VIETNAM: Cuc Phong, 20.iii.1995, K. Masumoto leg. (0/1 in HTHJ); LAOS: 20 km NW of Louang Namtha, 900 m, 5.-11.v.1997, 21°09'N 101°18'E, M. ŠTRBA & R. HERGOVITS leg. (1/0 in FKCC); Hua Phan prov., Phu Loei N.P., Ban Sakok, 23.-25.v.2001, 20°10'N 103°12'E, J. BEZDĚK leg. (0/1 in JBCB).

Aedeagus as in Fig. 14.

Distribution. Vietnam. New species for Laos.

***Apophyllia viridipennis* (JACOBY, 1885)**

*Galerucella viridipennis* JACOBY, 1885: Proc. Zool. Soc. Lond., 1885: 744, plate XLIV, fig.9 (type locality: Kurigahara, Wada toge); WEISE, 1924: 61.

*Apophyllia viridipennis*: OGLOBLIN, 1936: 140 (key), 393 (key), 142; KIMOTO, 1964a: 372; KIMOTO, 1964b: 291 (key), 292 (Japan); WILCOX, 1971: 149; KIMOTO, 1985: 2 (Japan); KIMOTO & TAKIZAWA, 1994: 61 (drawing), 233 (key), 305.

TYPE MATERIAL EXAMINED

Lectotype (male), present designation, labelled: „Type H.T. [white round label with red margin, p] // Type. Sp. figured. [w, p] // Jacoby Coll. 1909-28a. [w, p] // Japan Lewis [w, h] // *viridipennis* Jac. [blue label, h]” (in BMNH); 1 paralectotype (female), labelled: „Kurigahara. 4.VIII.-6.VIII.81. [w, p] // Japan. G. Lewis. 1910-320. [w, p] // *Galerucella viridipennis* Jac. [blue label, h] //

*Apophylia viridipennis* Jac. f [h] D. Ogloblin det. [w, p]" (in BMNH); 1 paralectotype (male), labelled: „Japan. G. Lewis. 1910-320. [w, p] // Kurigahara. 4.VIII.-6.VIII.81. [w, p] // *A. viridipennis* Jac. [h] det. K.G.Blair. [w, p]" (in USNM); 2 paralectotypes (males), labelled: „Japan Lewis [w, h] // *G. viridipennis* [blue label, h] // 1st Jacoby Coll. [w, p] // Type [p] 17872 [red label, h] // *Galerucella viridipennis* Jacoby SYNTYPES [w, h]" (in MCZC). The specimens are provided with one red label: „LECTOTYPUS [or PARALECTOTYPUS] *Galerucella viridipennis* Jacoby, 1885, des. J. Bezděk 2002".

#### ADDITIONAL MATERIAL EXAMINED

JAPAN: Akarira (1/0 in KUEC); Gifu Pref., Hirugano, 2.viii.1947 (0/1 in NHMB); Honshu, Nagano-ken, Nobeyama, 1300 m, 19.viii.1996, F. J. DE VRIES leg. (2/1 in RBNN); Kohukabori, Nasu Totigi, 24.vii.1993, H. TAKIZAWA leg. (3/7 in HTHJ); Tatesina-Yama, Nagano, 10.x.1975, H. TAKIZAWA leg. (0/1 in HTHJ).

Aedeagus as in Fig. 19.

Distribution. Japan.

COMMENTS. One paralectotype is deposited also in Taiwan Agricultural Research Institute (TARI), Taichung, Taiwan (SHIH 2003, pers. comm.). However I have no possibility to study this specimen.

### *Apophylia viridis* (JACOBY, 1884)

*Glyptolus viridis* JACOBY, 1884: Notes Leyd. Mus. 6: 63-64 (type locality: Silago, Moeara Laboe, Doesoen Tengah, Loeboe Gedang, Soeroelangoen, Mesauw, Solok, Soekadana); DUVIVIER, 1885: L (Sumatra).

*Malaxia viridis*: JACOBY, 1889: 216 (Burma); DUVIVIER, 1891: 46 (India); BALY, 1887: 268 (= *Glyptolus viridis*).

*Apophylia viridis*: WEISE, 1924: 184; WILCOX, 1971: 149; KIMOTO, 1990: 27; MOHAMEDSAID, 1995: 5 (Sabah); MOHAMEDSAID, 1999: 118 (Sabah); MOHAMEDSAID & HOLLOWAY, 1999: 164 (Borneo); MOHAMEDSAID, 2000a: 348 (Malaysia).

*Apophylia* [sic!] *javana* PIC, 1927: L'Échange, 43: 7-8 (type locality: Java).

*Apophylia javana*: WILCOX, 1971: 145; KIMOTO, 1990: 26. **syn. nov.**

*Apophylia signatipennis* PIC, 1945: L'Échange 61: 3 (type locality: Java); WILCOX, 1971: 148; KIMOTO, 1990: 27. **syn. nov.**

*Apophylia medana* PIC, 1946: L'Échange, 62: 14 (type locality: Sumatra); WILCOX, 1971: 146; KIMOTO, 1990: 27. **syn. nov.**

#### TYPE MATERIAL EXAMINED

##### *Glyptolus viridis*

Lectotype (female), present designation, labelled: „Sumatra Exped. [w, h] // Soeroe 4. 78 [grey label, h] // Type [p] 18495 [red label, h]" (in MCZC). The lectotype is provided with one red label: „LECTOTYPUS *Glyptolus viridis* Jacoby, 1884, des. J. Bezděk 2002".

##### *Apophylia javana*

Lectotype (male), present designation, labelled: „Java orient. Montes Tengger 4000' 1890 H. Fruhstorfer [blue label, p] // type [w, h] // LECTOTYPE [red label,

p]” (in MNHN); 1 paralectotype (female), labelled: „Java orient. Montes Tengger 4000’ 1890 H. Fruhstorfer [blue label, p] // type [w, h] // TYPE [red label, p] // javana n sp [w, h] // PARALECTOTYPE [red label, p]” (in MNHN).

*Apophyllia signatipennis*

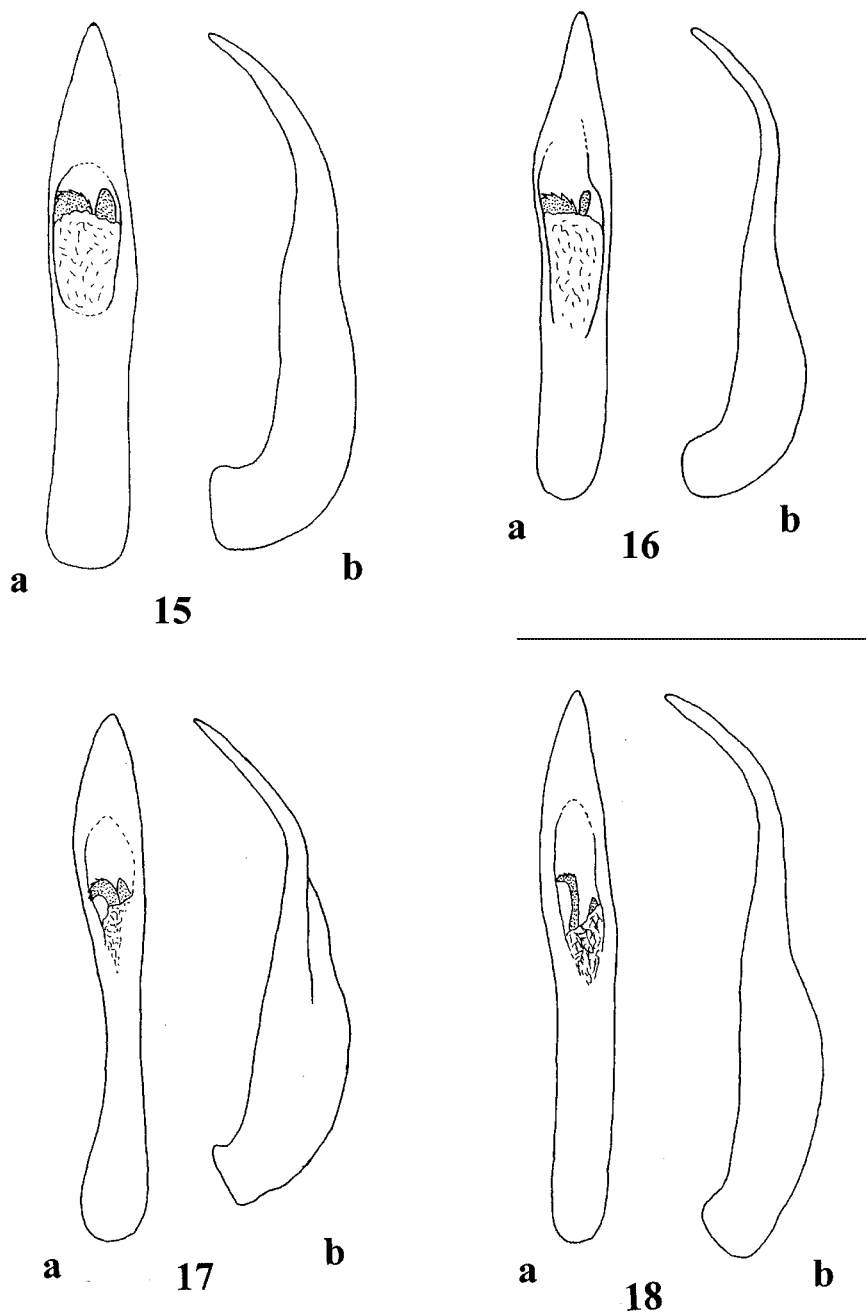
Holotype (male), labelled: „Noesa Kambangan F. C. Drescher [p] 22.XI.1936 [w, h] // type [w, h] // TYPE [red label, p] // Muséum Paris Coll. M. Pic [w, p] // signatipennis n sp [w, h]” (in MNHN).

*Apophyllia medana*

Lectotype (female), present designation, labelled: „Medan Mjög. [w, p] // ? viridis Jac. [w, h] // type [w, h] // TYPE [red label, h] // medana n sp [w, h] // LECTOTYPE [red label, p]” (in MNHN); 1 paralectotype (female), labelled: „Medan Mjög. [w, p] // PARALECTOTYPE [red label, p]” (in MNHN).

ADDITIONAL MATERIAL EXAMINED

THAILAND: Satun Prov., Thale Ban, 200 m, 6°45’N 100°09’E, 8.-13.iv.1997, J. KOLIBÁČ leg. (1/0 in NHMB); Trang Prov., Khaophappa Khaochang, 200 m, 1.-13.i.1964, G. A. SAMUELSON leg. (18/3 in BPBM); MALAYSIA: Island of Perak, BAKER leg. (0/1 in USNM); Perak, Maxwell hill, 4400 ft., vi.1958, R. TRAUB leg. (0/1 in USNM); Malacca, Tengah Gebirge, P. ZOBRYŠ leg. (0/1 in ZMHB); Perak, Maxwell hill, above Taiping city, 900-1000 m, 12.-16.i.1995, S. BEČVÁŘ J. & S. leg. (0/1 in JVCJ); Pahang, Fraser’s hill, 110 km N Kuala Lumpur, 1500 m, 7.-10.i.1995, S. BEČVÁŘ J. & S. leg. (0/1 in JVCJ); Perak, 25 km NE of Ipoh, Banjaran Titi Wangsa Mts., Korbu Mts., 1200 m, 27.i.-2.ii.1999, P. PACHOLÁTKO leg. (0/1 in NHMB); Perak, 40 km SE of Ipoh, Cameron Highlands, Ringlet, 900 m, 4°25’N 101°23’E, 25.iv.-5.v.2001, M. ŘÍHA leg. (0/2 in JBCB); Benom Mts., 15 km E Kampong Dong, 700 m, 3°53’N 102°01’E, 1.iv.1998, DEMBICKÝ & PACHOLÁTKO leg. (0/2 in JBCB); the same data, 24.iii.-15.iv.1998, D. HAUCK leg. (1/1 in JBCB); Sabah, Sandakan, BAKER leg. (2/11 in USNM); Sabah, Ranau, 23.viii.1983, G. F. HEVEL & W. E. STEINER leg. (1/3 in USNM); Borneo, Bettotan near Sandakan (0/1 in BMNH); INDONESIA: Sumatra, Benculen, iv.1891, E. MODIGLIANI leg. (0/3 in MCSN); Sumatra, Benkoelen, Lebong Tandai, 1920, C. J. BROOKS (0/1 in BMNH); Sumatra, Fort de Kock, 920 m, i.1922, E. JACOBSON leg. (0/1 in USNM; 0/1 in DEI); the same data, xii.1921 (0/1 in USNM); Sumatra, Fort de Kock, WEYERS leg. (3/5 in Bruxelles); Sumatra NO, Tandjong Morawa Serdang, B. HAGEN leg. (1/1 in ISNB); Sumatra, Manna, KLAPPERT leg. (0/2 in SMNS); Sumatra N, Dolok Merangir, xii.1974, DIEHL leg. (0/1 in DEGG); Sumatra, Bungus Bucht Padang, 1.-6.xi.1908, SCHOEDE leg. (0/1 in ZMHB); Sumatra NE, Tebing-tinggi, DR. SHULTHEISS leg. (0/1 in DEI); Sumatra, Merang, DOHERTY leg. (1/1 in BMNH); Sumatra, Lampong, BUXTON leg. (0/2 in BMNH); Sumatra E, Riau prov., Bukit Tigapuluh N.P., 0°50’S 102°26’E, 18.-25.i.2000, J. BEZDĚK leg. (0/1 in JBCB); Java, Noesa Kemsangan, i. 1911, DRESCHER leg. (0/2 in ZMHB); Java, Baluran N.P., 14.-16.iv.1996, R. ZAJÍČEK leg. (1/12 in NHMB); Borneo, GRABOWSKY (0/1 in Berlin); Borneo, Banguay (0/2 in ZMHB); Sarawak, R. Kapah trib., of R. Tinjar, 20.x.1932, old secondary forest, native collector (0/



15-18. Aedeagus (a - dorsal view, b - lateral view): 15 - *Apophyllia viridis* (specimen from Java), 16 - *A. viridis* (specimen from Thailand), 17 - *A. viridis* (holotype of *A. signatipennis*), 18 - *A. viridis* (lectotype of *A. javana*). Scale 1 mm



1 in BMNH); Sarawak, Mt. Dulit, 4 000 ft., Moss forest, 22.x.1932, native collector (0/1 in BMNH); Bali, Yeh Sumbul Negar, 5.-8.xii.1999, H. TAKIZAWA leg. (3/1 in HTHJ).

Aedeagus as in Figs 15-18.

Distribution. Indonesia (Sumatra, Java, Bali, Sarawak, Borneo), Malaysia, Thailand. DUVIVIER (1891) reported *A. viridis* also from India (Konbir and Tetara) and JACOBY (1889) from Burma. Both records should be verified.

#### COMMENTS

*A. viridis* was described according to numerous material by JACOBY (1884). I was not able to trace the deposition of the type series, except for one female deposited in MCZC. This female is designated here as the lectotype. PIC (1927; 1945; 1946) described 3 species subsequently: *A. javana*, *A. signatipennis* and *A. medana*. Lectotypes are designated here for *A. javana* PIC, 1927 and for *A. medana* PIC, 1946. *A. javana* was described from one couple from Java, *A. medana* from two females from Sumatra. Both *A. medana* and *A. javana* are conspecific with *A. viridis*. *A. signatipennis* was described from single small male with unusual wide purplish elytral suture. Besides this colour character, I did not find any morphological difference, including the shape of aedeagus, between *A. signatipennis* and *A. viridis*. All three PIC taxa (*A. javana*, *A. signatipennis* and *A. medana*) are considered new synonyms of *A. viridis*.

#### DESCRIPTIONS OF NEW SPECIES.

##### *Apophyllia bertiae* n. sp.

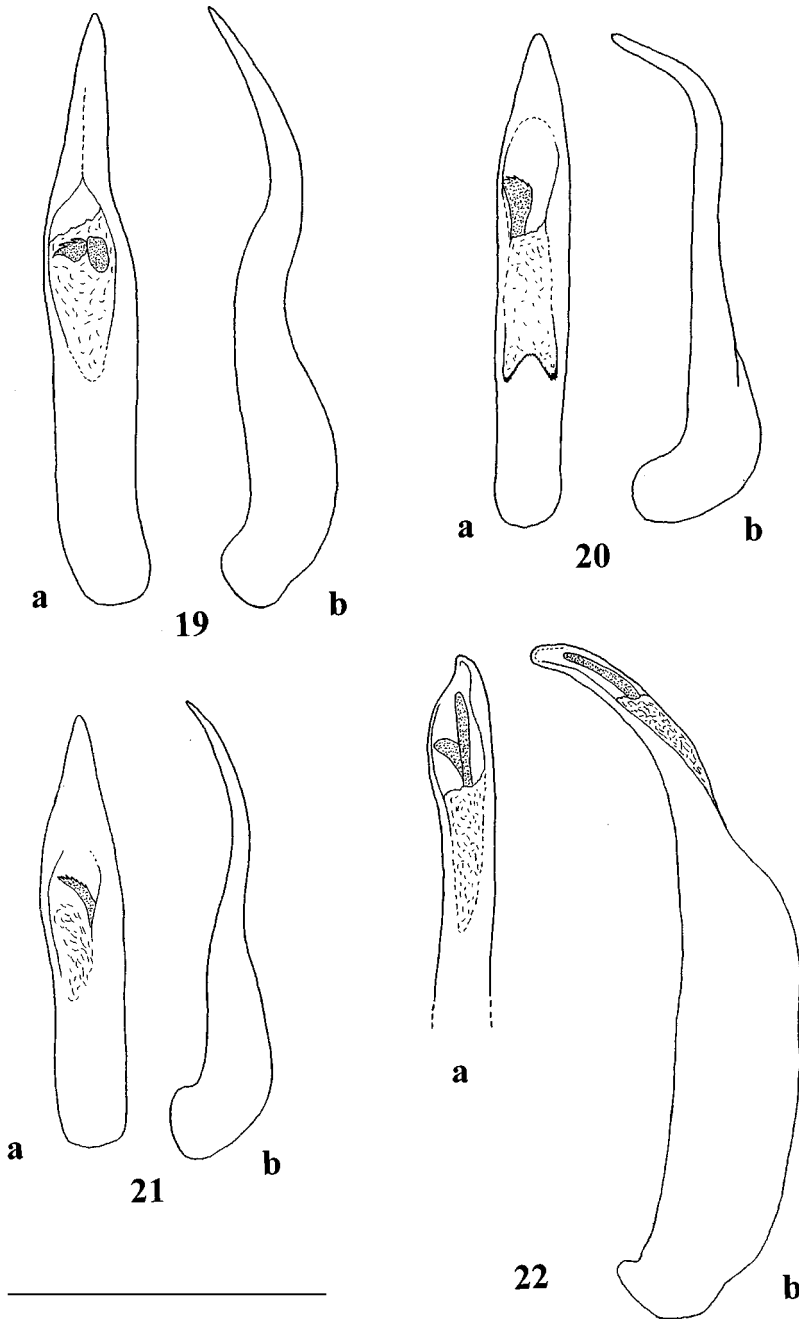
#### TYPE MATERIAL

Holotype (male), labelled: "Dehra Dun, U.P., India, 8-9'16.H.G.C. [w, p]" (in BMNH); 1 paratype (male), labelled: "India bor. 330 m UTTAR PRADESH bor. HARIDWAR, CHILA 9.-14.8.1994 lgt. M. Snizek [w, p]" (in JVCJ); 2 paratypes (females), labelled: "Dehra-Dun 1940-45 Kumaon Himalaya leg. Liesenfeldt [w, p]" (in NHMB); 1 paratype (female), labelled: "Siwalik-Hills [w, h] // Dehra-Dun 1940-45 Kumaon Himalaya [w, p]" (in NHMB); 1 paratype (female), labelled: "INDIA [p], U.P. Varansi 1973 Lakshman Lac on Helicteres isora [h] C.I.E. A [p] 6516 [w, h]" (in BMNH); 1 paratype (female), labelled: "Haldwani Divn. Kumaon, U.P. Aug'21, H.G.C. [w, p] // 3721 [w, p] // 3721 [w, p] // H.G.Champion Coll. B.M. 1953-156 [w, p]" (in BMNH); 1 paratype (female), labelled: "Sitapur U.P. India. July, 1917, HGC [w, p] // 1402 [blue label, h] // .O. [pink label, p] // H.G.Champion Coll. B.M. 1953-156 [w, p]" (in BMNH); 1 paratype (female), labelled: "Sitapur U.P. India. July, 1917, HGC [w, p] // 1402 [blue label, h] // Apophyllia sericea Fab. Det S. Maulik 1934 [w, p]" (in BMNH); 1 paratype (female), labelled: "Haldwani Dist. Kumaon, India. H.G.C. [w, p]" (in BMNH); 1 paratype (female), labelled: "Kangra Valley. 4500 ft vii-x1899 Dudgeon [w, p] //

*Apophylia sericea* Fab. Det S. Maulik 1934 [w, p]“ (in BMNH); 4 paratypes (1 male, 3 females), labelled: “Sitapur, W.Almora, India. H.G.C. [w, p] // *Apophylia sericea* Fab. Det S. Maulik 1934 [w, p]“ (in BMNH); 1 paratype (female), labelled: “Dehra Dun, U.P., India, 8-9’16.H.G.C. [w, p] // H.G.Champion Coll. B.M. 1953-156 [w, p]“ (in BMNH); 4 paratype (2 males, 2 females), labelled: “Dehra Dun, U.P., India, 8-9’16.H.G.C. [w, p] // *Apophylia sericea* Fab. Det S. Maulik 1934 [w, p]“ (in BMNH); 2 paratypes (1 male and 1 female), labelled: “W.Almora, Kumaon, U.P. India. H.G.C. [w, p]“ (in BMNH); 1 paratype (male), labelled: “Fyzabad, Unit. Prov., India. R.W.G.Hingston. B.M.1923-293 [w, p]“ (in BMNH); 1 paratype (male), labelled: “INDIA.U.P. Deahra Dun. 1932. H.G.Champion [w, p] // H.G.Champion Coll. B.M. 1953-156 [w, p]“ (in BMNH); 2 paratypes (females), labelled: “E.Coll Laferté [w, p] // Bacon N. India [w, h] // 67.56 [w, p]“ (in BMNH); 1 paratype (male), labelled: “Entomologist to Govt. Of India. No. [p] 811. [h] I [p] 15.VIII.190 [p] 4 [h] Sura ... B ... H.M. ... [blue label, partly unreadable, h] // Andrewes Bequest. B.M.1922-221. [w, p] // *Apophylia sericea* Fab. Det S. Maulik 1934 [w, p]“ (in BMNH); 1 paratype (male), labelled: “Bombay India [w, h] // G. Bryant Coll. 1919-147 [w, p] // *Apophylia* sp. [w, h]“ (1/0 in BMNH); 1 paratype (female), labelled: “Bombay India [w, p] // JCBridwell coll [p] Oct. 24 [w, h]“ (in USNM); 1 paratype (male), labelled: “Mangalore India Aug’28 [w, p] // JCBridwell coll [w, p]“ (in USNM); 1 paratype (male), labelled: “Margao Goa Ind [w, p] // JCBridwell coll Jul’25 [w, p]“ (in USNM); 1 paratype (female), labelled: “Salcete Goa India [w, p] // JCBridwell coll Jul’25 [w, p]“ (in USNM); 11 paratypes (4 males, 7 females), labelled: “Mormugao Goa India [w, p] // JCBridwell coll Sep’25 [w, p]“ (in USNM); 2 paratypes (females), labelled: “Mormugao Goa India [w, p] // JCBridwell coll Jul’25 [w, p]“ (in USNM); 6 paratypes (2 males, 4 females), labelled: “Mormugao Goa India [w, p] // JCBridwell coll Aug’25 [w, p]“ (in USNM); 6 paratypes (3 males, 3 females), labelled: “India or. Nagpore [w, p] // Coll. G. Hauser [w, p] // Zool. Mus. Berlin [w, p] // *Apophylia sericea* Fab. [h] Det. [p] R.K.Annand [h] 19 [p] 89 [w, h]“ (in ZMHB); 1 paratype (female), labelled: “Coll. G. Hauser [w, p] // Zool. Mus. Berlin [w, p] // *Apophylia sericea* Fab. [h] Det. [p] R.K.Annand [h] 19 [p] 89 [w, h]“ (in ZMHB); 1 paratype (male), labelled: “West Pakistan (WP 6) Islamabad 30.VII. on light 1970 lgt. O. Štěrba [w, p]“ (in MMBC); 4 paratypes (2 males, 2 females), labelled: “PAKISTAN, Punjab, Rawalpindi, at light, Aug.27,1985 C.W.&L.B.O’Brien [w, p] // Askevold Coll. ’87 [w, p]“ (in HTHJ); 3 paratypes (1 male, 2 females), labelled: “INDIA: Kerala, Ambalayaval, 19.iv. 2003, Prathapan Coll. [w, p]“ (in KPVI, 1 female in JCB). The specimens of the newly described species are provided with one red label: „HOLOTYPUS [or PARATYPUS] *Apophylia bertiae* sp. nov. J. Bezděk det. 2002”;

#### DESCRIPTION

Body flattened, subparallel, slightly widened backwards, densely pubescent, semiopaque.



19-22. Aedeagus (a - dorsal view, b - lateral view): 19 - *Apophyllia viridipennis*, 20 - *A. bertiae*, 21 - *A. assamensis*, 22 - *A. metallica*. Scale 1 mm

Head yellow; vertex and frontal tubercles can vary from brown (somewhat darker than the rest of head) to black. Pronotum, pro- and mesosternum yellow. Scutellum yellow to black. Metasternum black with yellow posterior and lateral margins in pale specimens, or black in dark specimens. Abdomen dark brown to black. The first 3 antennomeres yellow, the rest black. Legs yellow, tarsi and apical parts of tibiae often infuscate. Elytra metallic dark green or blue.

Labrum transverse, covered by several pale setae, anterior margin sinuate. Anterior part of head semiopaque, covered by microsculpture and by several long pale hairs, vertex dull, coarsely and densely punctured. Interantennal space with small deep groove. Frontal tubercles small, subtriangular, slightly elevated above vertex, semiopaque, covered by microsculpture. Vertex densely covered with short pale hairs. Antennae slender, 0.65-0.85 times as long as the body, length ratio of antennomeres 1 to 11: 13:6:12:16:16:16:17:14:12:11:12.

Pronotum transverse, 1.80-2.00 times as broad as long, widest at the first third, narrowed anteriorly and posteriorly, semiopaque, densely covered with coarse punctures and short pale hairs. Surface with feebly depressed median line, laterally with 2 large deep depressions. Anterior margin slightly sinuate, lateral margins rounded, posterior margin almost straight. All margins thinly bordered. Anterior angles widely rounded, posterior angles obtusely angulate, rounded.

Scutellum small, subtriangular, with rounded apex, covered by small dense punctures and short pale hairs, semiopaque.

Elytra almost parallel, slightly widened backwards, semiopaque. Humeral calli well developed. Elytral surface very densely covered with small confused punctures and short pale hairs. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Ventral surface lustrous, finely punctured and covered by pale hairs.

Basimetatarsomere 1.4 times as long as two following metatarsomeres combined.

Body length 4.10-6.10 mm (holotype 4.30 mm).

The shape of aedeagus as in Fig. 20.

Sexual dimorphism: Male: Antennomeres 1 to 5 with very long pale hairs, last visible sternite with very large semicircular incision, claws bifid. Female: Antennomeres 1 to 5 with moderately long pale hairs, last visible sternite complete, claws appendiculate.

#### DISTRIBUTION

India and Pakistan.

#### DIAGNOSIS

*A. bertiae* n. sp. is variable in colour. Pale specimens (including holotype) have yellow scutellum and yellow head with brown vertex, dark specimens (populations from Goa, Bombay and Nagpore) have vertex and scutellum black. Except the colour difference I am unable to find any other morphological character (including the structure of aedeagus) to distinguish these two colour forms.

Due to long hairs on antennomeres 1 to 5 in male, *A. bertiae* sp. nov. seems to be closely related to *A. assamensis* (JACOBY, 1891). Both species are easily identified by the structure of aedeagus (Figs 20-21) and by the colour of pronotum (black in *A. assamensis*, yellow in *A. bertiae* sp. nov.). The dark forms of *A. bertiae* sp. nov. are also similar to *A. metallica* JACOBY, 1904 and *A. medvedevi* SAMODERZHENKOV, 1988, these two species differ, however, by the structure of aedeagus (Figs 22-23) and by the absence of long pale hairs on antennomeres 1 to 5 in male.

#### ETYMOLOGY

Dedicated to Dr. Nicole BERTI, the curator of Muséum National d'Histoire Naturelle Paris.

#### *Apophyllia kimotoi* n. sp.

*Apophyllia nigriceps*: KIMOTO, 1964: 291 (Japan, key); KIMOTO, 1985: 2 (Japan); KIMOTO & TAKIZAWA, 1994: 233 (key), 305 (Japan).

#### TYPE MATERIAL

Holotype (male), labelled: „(Kyushu) Mt. Sobo [p] 27. VII. [h] 195 [p] 3 [h] Col. S. Kimoto [w, p] // *Apophyllia nigriceps* Laboissière [h] Det. S. Kimoto, 19 [p] 72 [w, h]“ (in KMNH). The holotype of the newly described species is provided with one red label: „HOLOTYPUS *Apophyllia kimotoi* sp. nov. J. Bezděk det. 2003”.

#### DESCRIPTION

Body flattened, parallel-sided, densely pubescent, dull.

Head bicolorous; vertex and frontal tubercles yellow black; anterior part of head and underside yellow. Pronotum, scutellum and underside black. Antennae yellow with last 4 antennomeres infusate. Legs yellow, last two tarsomeres infusate. Elytra metallic green.

Labrum transverse, covered by several pale setae, anterior margin sinuate. Anterior part of head semiopaque, covered by microsculpture, vertex dull, coarsely and densely punctured. Interantennal space with small groove. Frontal tubercles small, subtriangular, slightly elevated above vertex, semiopaque, covered by microsculpture. Vertex densely covered with short pale hairs. Antennae slender, 0.90 times as long as the body, length ratio of antennomeres 1 to 11: 13:8:14:20:19:17:17:17:14:14:16.

Pronotum transverse, 1.65 times as broad as long, widest at the first third, narrowed anteriorly and posteriorly, dull, densely covered with coarse punctures and long pale hairs. Surface with two indistinct feeble depressions in median line (near the middle of anterior and posterior margins), laterally with two very large deep depressions. Anterior margin slightly sinuate, posterior margin almost straight. All margins thinly bordered. Anterior angles widely rounded, posterior angles obtusely angulate, rounded, with very small dent directed upwards.

Scutellum subtriangular, apex widely rounded, with small dense punctures and short pale hairs, dull.

Elytra parallel, dull. Humeral calli well developed. Elytral surface very densely covered with small confused punctures and short pale hairs. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Ventral surface lustrous, finely punctured and covered by pale hairs. Last visible sternite with very deep semicircular incision.

Basimetatarsomere 1.5 times as long as two following metatarsomeres combined. Claws bifid.

Body length of the holotype 4.55 mm.

The shape of aedeagus as in Fig. 24.

#### DISTRIBUTION

Japan. All previous records of *A. nigriceps* from Japan refer very probably to *A. kimotoi* n. sp.

#### DIAGNOSIS

*A. kimotoi* sp. nov. is very similar to *A. velai* BEZDĚK, 2003 (from Taiwan), *A. clypeata* SAMODERZHENKOV, 1988 (from Vietnam) and *A. nigriceps* LABOISSIÈRE, 1927 (from China, Vietnam). *A. kimotoi* sp. nov. differs by yellow anterior part of head and by the structure of aedeagus (Figs 25-27).

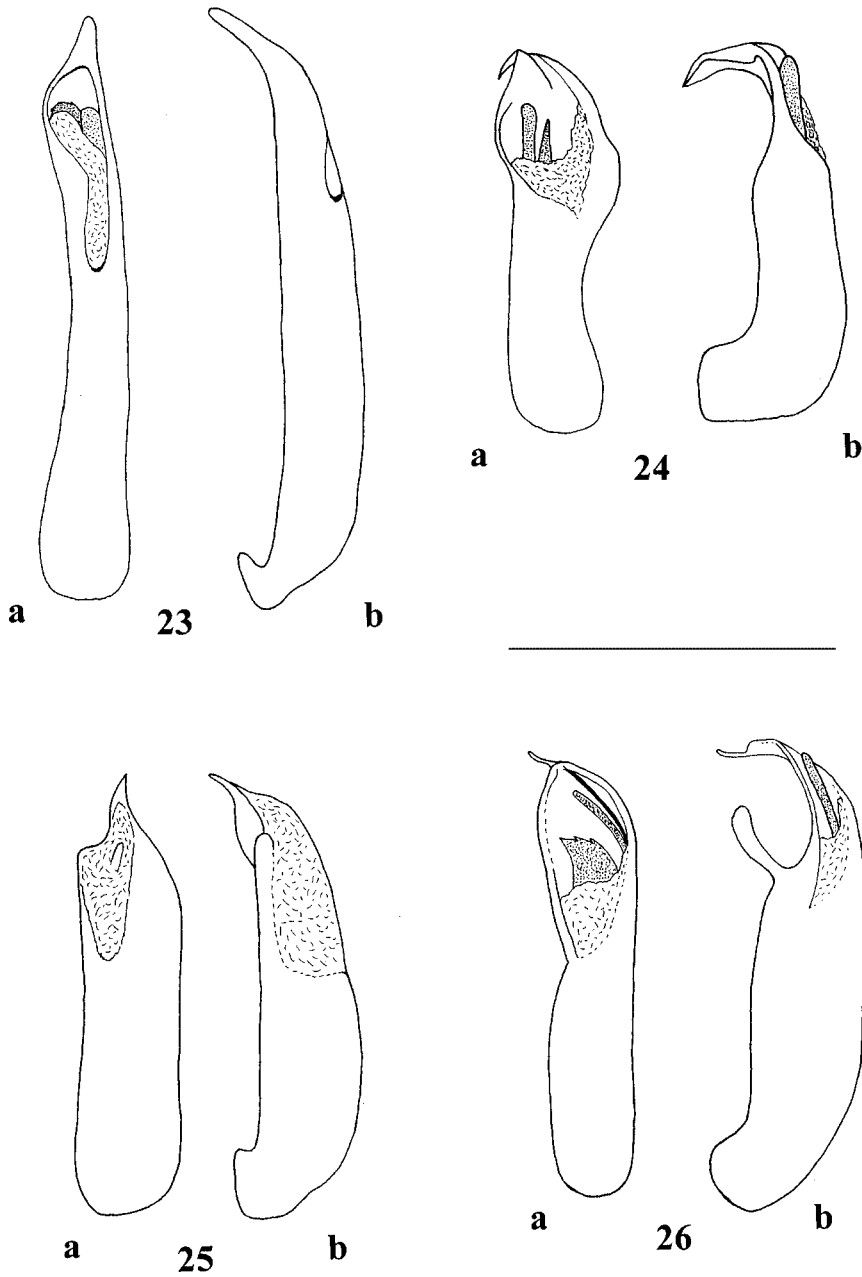
#### ETYMOLOGY

Dedicated to Dr. Shinsaku KIMOTO, a famous Japanese specialist in Chrysomelidae.

### *Apophyllia shuteae* n. sp.

#### TYPE MATERIAL

Holotype (male), labelled: "NAINI TAL, INDIA Bhim Tal, 609 m VIII. 1961 leg. G. Scherer [w, p]" (in NHMB); 1 paratype (female), labelled: "NAINI TAL, INDIA Naukutchia Tal, 600 m, VIII. 1961 leg. G. Scherer [w, p]" (in NHMB); 1 paratype (male), labelled: "NAINI TAL, INDIA 1932 m, VII. 1961 leg. G. Scherer [w, p]" (in NHMB); 1 paratype (female), labelled: "DEHRA DUN, INDIA Mussoorie, ca 800 m Kemptee Falls, VIII. 1961, leg. G. Scherer [w, p]" (in NHMB); 2 paratypes (males), labelled: "Dehra-Dun 1940-45 Kumaon Himalaya leg. Liesenfeldt [w, p]" (in NHMB); 1 paratype (female), labelled: "INDIA bor. UTTAR PRADESH bor. THALARI (TALWARI) DEBAL 10 KM N Lgt. M. Snizek [w, p]" (in JVCJ); 1 paratype (female), labelled: "W. Almora Divn Kumaon U.P. Augt. 1917. HGC [w, p]" (in BMNH); 1 paratype (female), labelled: "Punjab: Simla. E.C. Ansorge. B.M. 1924-250 [w, p]" (in BMNH); 4 paratypes (males), labelled: "W. Almora, Kumaon U.P. India. H.G.C. [w, p] // *Apophyllia sericea* Fab.



23-26. Aedeagus (a - dorsal view, b - lateral view): 23 - *Apophyllia medvedevi*, 24 - *A. kimotoi*, 25 - *A. velai*, 26 - *A. clypeata*. Scale 1 mm

Det S. Maulik 1934. [w, p]“ (in BMNH); 1 paratype (female), labelled: “Lansdowne Division, U.P., India. F.W.C. [w, p] // *Apophylia sericea* Fab. Det S. Maulik 1934. [w, p]“ (in BMNH); 1 paratype (female), labelled: “W. Almora Divn Kumaon U.P. July 1918. HGC [w, p] // E68 [w, p]“ (in BMNH); 1 paratype (female), labelled: “W. Almora Divn Kumaon U.P. July 1918. HGC [w, p] // E68 [w, p] // *Apophylia sericea* Fab. Det S. Maulik 1934. [w, p]“ (in BMNH); 7 paratypes (3 males, 4 females), labelled: “INDIA bor. 3300 m Uttar Pradesh bor. Kedarnath, 14 km S Rambara, 26-29.7. M. Snížek leg. 1994 [w, p]“ (in FKCC, 2 paratypes in JBCB). The specimens of the newly described species are provided with one red label: „HOLOTYPUS [or PARATYPUS] *Apophylia shuteae* sp. nov. J. Bezděk det. 2002”.

#### DESCRIPTION

Body flattened, subparallel, slightly widened backwards, densely pubescent, semiopaque.

Head bicolorous; vertex and postgenae black; anterior part of head, mouthparts and underside yellow; frontal tubercles yellow to blackish. Pronotum yellow with median black spot. Scutellum black. Meso-, metasternum and abdomen black. The first 6-7 antennomeres yellow, the rest black. Legs yellow, tarsi often infusate. Elytra metallic dark green.

Labrum transverse, covered with several pale setae, anterior margin slightly sinuate. Anterior part of head lustrous, vertex dull, coarsely and densely punctured. Interantennal space with small deep groove. Frontal tubercles small, subtriangular, slightly elevated above vertex, lustrous. Vertex densely covered with short pale hairs. Antennae slender, 0.80 times as long as the body, length ratio of antennomeres 1 to 11: 12:6:11:16:12:14:12:11:11:9:11.

Pronotum transverse, 2.00 – 2.10 times as broad as long, widest at the first quarter, narrowed posteriad, semiopaque, densely covered by coarse punctures and pale hairs. Surface with two deep depressions. Anterior and posterior margins slightly sinuate. All margins indistinctly bordered. Anterior angles widely rounded, posterior angles obtusely angulate, rounded.

Scutellum small, subtriangular, with small dense punctures and short pale hairs, semiopaque.

Elytra almost parallel, slightly widened backwards, semiopaque. Humeral calli well developed. Elytral surface very densely covered with small confused punctures and short pale hairs. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Ventral surface lustrous, finely punctured and covered by pale hairs.

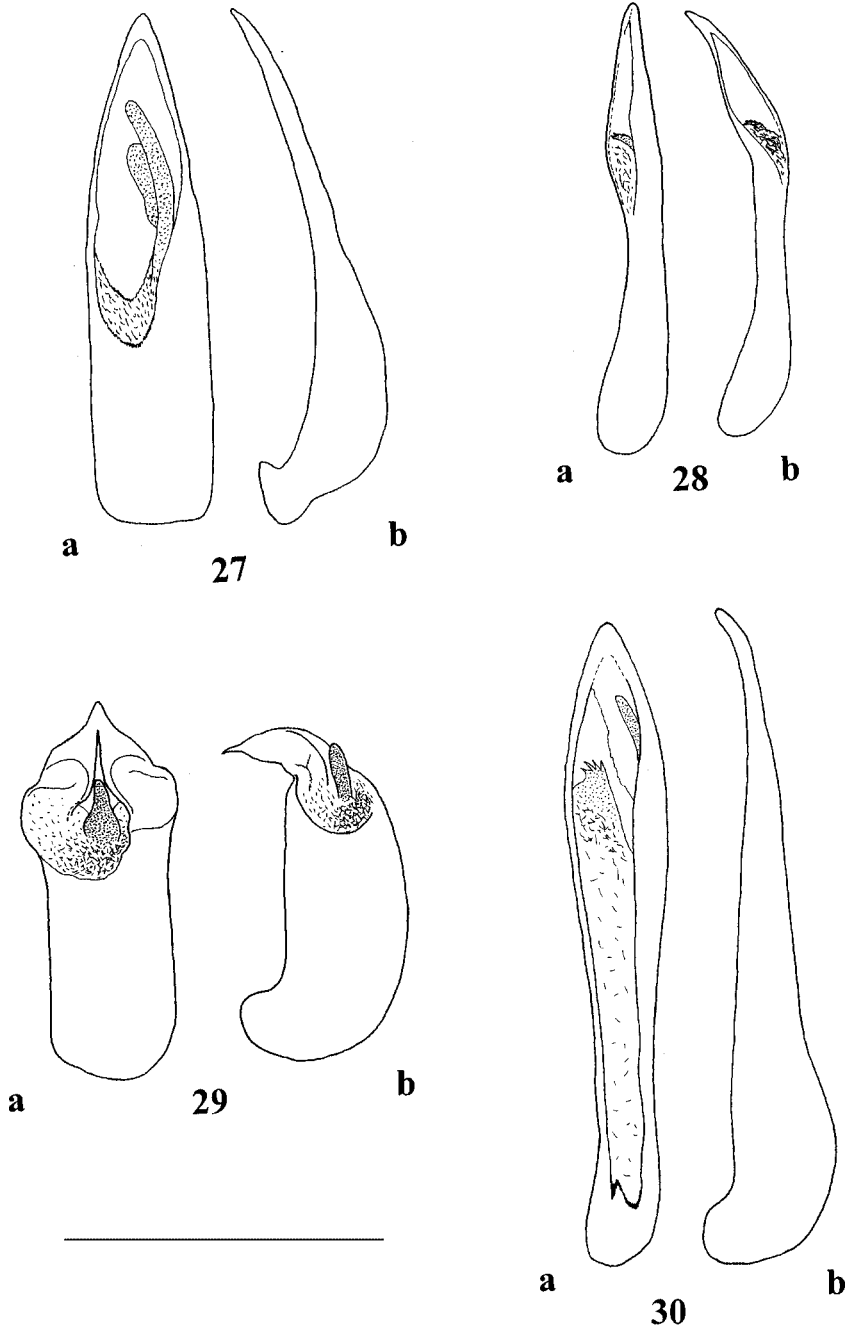
Basimetatarsomere as long as two following metatarsomeres combined.

Body length 3.70-4.75 mm (holotype 4.10 mm).

The shape of aedeagus as in Fig. 28.

Sexual dimorphism: Male: Last visible sternite with large semicircular incision, claws bifid. Female: Last visible sternite complete, claws appendiculate.





27-30. Aedeagus (a - dorsal view, b - lateral view): 27 - *Apophyllia nigriceps*, 28 - *A. shuteae*, 29 - *A. flavovirens*, 30 - *A. nepalica*. Scale 1 mm

## DISTRIBUTION

India.

## DIAGNOSIS

*A. shuteae* sp. nov. is one of the smallest *Apophylia* species. Due to one median black spot on pronotum and body length, *A. shuteae* sp. nov. can be compared only with *A. viridis* (JACOBY, 1884). Both species differ by the structure of aedeagus (Figs 15-18, 28). Other *Apophylia* species with median pronotal spot (*A. vietnamica* SAMODERZHENKOV, 1988, *A. flavovirens* FAIRMAIRE, 1878 and *A. nepalica* BEZDĚK, 2003) differ by the structure of aedeagus (Figs 14, 29-30) and by longer body size. Moreover, *A. nepalica* have only last antennomere black.

## ETYMOLOGY

Dedicated to Dr. Sharon SHUTE, a curator of The Natural History Museum (London, England).

*Apophylia sikkimensis* n. sp.

## TYPE MATERIAL

Holotype (male) and 17 paratypes (10 males and 7 females), labelled: „Sikkim: Gopaldhara, Rungbong Vall. H. Stevens. [w, p]“ (in BMNH). The specimens of the newly described species are provided with one red label: „HOLOTYPUS [or PARATYPUS] *Apophylia sikkimensis* sp. nov. J. Bezdek det. 2002”.

## DESCRIPTION

Body flattened, parallel, densely pubescent, dull.

Head black, mouthparts and clypeal margin yellowish to brownish, frontal tubercles, postgenae, anterior part of head, mouthparts and underside yellow, labrum occasionally darkened. Pronotum, scutellum and underside black. The first 3 to 6 antennomeres yellow, the rest black. Legs yellow. Elytra metallic green.

Labrum transverse, covered by several pale setae, anterior margin sinuate. Anterior part of head semiopaque, covered by microsculpture, longitudinally with a row of very long pale setae, vertex dull, coarsely and densely punctured. Interantennal space with small groove. Frontal tubercles small, subtriangular, slightly elevated above vertex, semiopaque, covered by microsculpture. Frons with distinct shallow groove. Vertex densely covered with short pale hairs. Antennae slender, 0.70 times as long as the body, length ratio of antennomeres 1 to 11: 18:7:15:19:17:17:16:14:13:12:15.

Pronotum transverse, 2.00 – 2.10 times as broad as long, widest at the first third, narrowed anteriorly and posteriorly, dull, densely covered with coarse punctures and long pale hairs. Surface with two indistinct feeble depressions in median line (near the middle of anterior and posterior margins), laterally with two very

large deep depressions. Anterior margin slightly sinuate, posterior margin almost straight. Anterior and posterior margins thinly bordered, lateral margins indistinctly bordered. Anterior angles widely rounded, posterior angles obtusely angulate, rounded.

Scutellum subtriangular, apex widely rounded, with small dense punctures and short pale hairs, dull.

Elytra parallel, dull. Humeral calli well developed. Elytral surface very densely covered with small confused punctures and short pale hairs. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Ventral surface lustrous, finely punctured and covered by pale hairs.

Basimetatarsomere 1.6 times as long as two following metatarsomeres combined.

Body length 4.20-7.10 mm (holotype 5.00 mm).

The shape of aedeagus as in Fig. 31.

Sexual dimorphism: Male: Last visible sternite with very deep subtriangular incision, claws bifid. Female: Last visible sternite complete, claws appendiculate.

#### DISTRIBUTION

India (Sikkim).

#### DIAGNOSIS

*A. sikkimensis* sp. nov. is very similar to *A. velai* BEZDĚK, 2003 (from Taiwan), *A. clypeata* SAMODERZHENKOV, 1988 (from Vietnam) and *A. nigriceps* LABOISSIÈRE, 1927 (from China, Vietnam and Japan). All these species can be exactly identified only by the structure of aedeagus (Figs 25-27, 31).

#### ETYMOLOGY

Named after Sikkim, a Region of India where the type series was collected.

### *Apophyllia taiwanica* n. sp.

*Apophyllia asahinai*: CHŪJŌ, 1963: 387 (Taiwan) (partim?); KIMOTO, 1965: 489 (Taiwan) (partim?); KIMOTO, 1966: 26 (Taiwan), 28 (key); KIMOTO, 1969: 22 (Taiwan); WILCOX, 1971: 142 (partim?); KIMOTO, 1986: 56 (Taiwan) (partim?); KIMOTO, 1991: 9 (Taiwan) (partim?); KIMOTO & CHU, 1996: 54 (Taiwan) (partim?).

*Apophyllia flavovirens*: CHŪJŌ, 1935: 174 (see CHŪJŌ, 1962: 23) (partim?); CHŪJŌ, 1938: 135 (see CHŪJŌ, 1962: 23)(partim?).

See also *A. asahinai*.

#### TYPE MATERIAL

Holotype (male) and 5 paratypes (2 males, 3 females), labelled: "Taihorin Formosa H. Sauter, 1911 [w, p] // 7.VIII. [w, p] // Chujo det. [w, h]" (in DEI); 11 paratypes (6 males, 5 female), labelled: "Taihorin Formosa H. Sauter, 1911 [w, p] // 7.VII. [w, p] // Chujo det. [w, h]" (in DEI); 3 paratypes (2 males, 1 female),

labelled: "Taihorin Formosa H. Sauter, 1911 [w, p] // 7.XI. [w, p] // Chujo det. [w, h]" (in DEI); 1 paratype (female), labelled: "Taihorin Formosa H. Sauter, 1911 [w, p] // 7.XII. [w, p] // Chujo det. [w, h]" (in DEI); 1 paratype (female), labelled: "Taihorin Formosa H. Sauter [p] XI 10 [w, h] // Chujo det. [w, h]" (in DEI); 1 paratype (male), labelled: "Taihorinsho Formosa H. Sauter [p] X 09 [w, h] // Chujo det. [w, h]" (in DEI); 1 paratype (male), labelled: "Formosa Taihorin [p] VI [h] 09 Sauter S. G. [w, p]" (in ZMHB); 1 paratype (female), labelled: "Formosa Taihorin. III.10 H. Sauter S.G. [w, p]" (in ZMHB); 1 paratype (female), labelled: "Formosa Taihorin. IX.10 Sauter S.G. [w, p]" (in ZMHB); 1 paratype (female), labelled: "FORMOSA Taihorin I. 10 Sauter S. [w, p]" (in ZMHB); 1 paratype (male), labelled: "Shis A 5 6 Formosa H. Sauter V.-VI.1912 [w, p]" (in DEI); 2 paratypes (females), labelled: "Banshoryo-Distr. Sokutsu (Formosa) H. Sauter 1912 [w, p] // 7.VII. [w, p] // Chujo det. [w, h]" (in DEI); 5 paratypes (2 males, 3 females), labelled: "Sokutsu Banshoryo Distr. H. Sauter 1912 [w, p] // 7.VI. [w, p] // Chujo det. [w, h]" (in DEI); 1 paratype (female), labelled: „Fuhosho 1909.IV. [w, p] // Formosa Sauter [w, p] // Paratype [red label, h] // Apophyllia asahinai CHŪJŌ [h] Det. M. CHUJO, 196 [p] 1 [w, h]" (in NHMB); 3 paratypes (1 males, 2 females), labelled: „Fuhosho 909.VI. [w, p] // Formosa Sauter [w, p] // Paratypus [p, red letters] Apophyllia asahinai Chujo [white label with red margins, h] // Paratype [red label, h] // Apophyllia asahinai CHŪJŌ [h] Det. M. CHUJO, 196 [p] 1 [w label, h]" (in HNHM); 1 paratype (female), labelled: "Fuhosho Formosa Sauter [p] IX [h] – 09 [w, p] // Apophyllia flavovirens FAIRMAIRE [h] Det. M. CHUJO [w, p]" (in DEI). The specimens of the newly described species are provided with one red label: „HOLOTYPUS [or PARATYPUS] *Apophyllia taiwanica* sp. nov. J. Bezdek det. 2002".

The following material is not included to the type series because it is represented only by females and is identified with some doubts as *A. taiwanica* sp. nov.: CHINA: Taiwan, Nantou Co., Lien-hua-chih, 3 km W of Yuch ih, 12.-14.Jul.1992, T. J. HENRY & A. G. WHEELER leg. (0/1 in USNM); Taiwan, Zentai, 28.viii.-2.ix.1907, SAUTER leg. (0/1 in ZMHB); Taiwan, Polisha, x.1909, SAUTER leg. (0/1 in ZMHB); Taiwan, Alishan, 2400 m, 17.-26.vi.1995, DALIHOD leg. (0/1 in JVCJ); Taiwan, Kosempo, iv.1909, SAUTER leg. (0/1 in HNHM); Taiwan, Takao, 1907, SAUTER leg. (0/1 in HNHM).

#### DESCRIPTION

Body flattened, parallel, densely pubescent, dull.

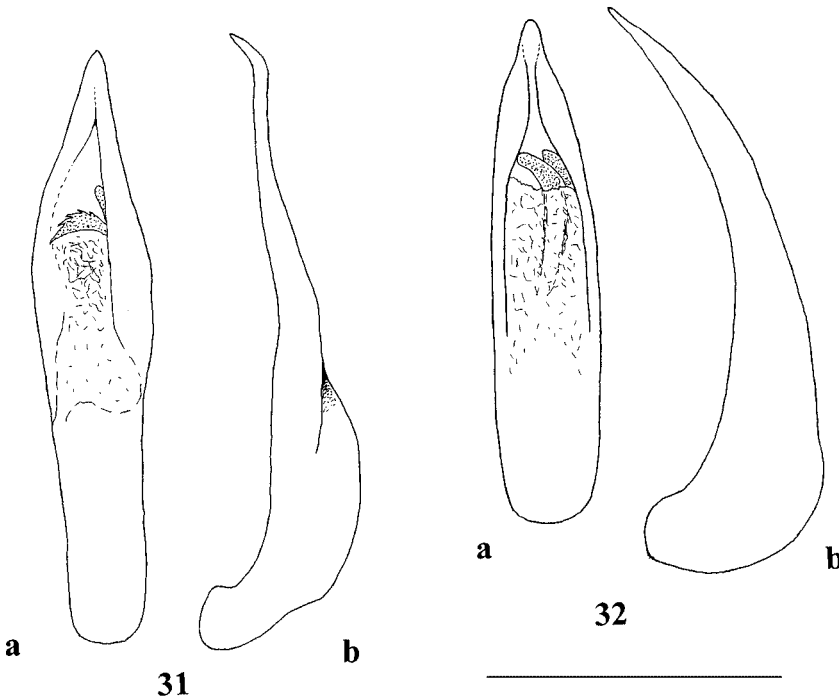
Head bicolorous; vertex, frontal tubercles and postgenae black; anterior part of head, mouthparts and underside yellow. Pronotum yellow, with small median black spot (pronotum completely yellow rarely). Prosternum yellow, meso- and metasternum black. Scutellum black. Abdomen black with pale extreme posterior margin of each sternite (last sternite often completely yellow) in female; black with posterior margin of last visible sternite in male. The first 3 or 4 antennomeres yellow, the rest black. Legs yellow. Elytra metallic green or blue.

Labrum transverse, covered by several pale setae, anterior margin sinuate. Anterior part of head semiopaque, covered by microsculpture, vertex dull, coarsely and densely punctured. Interantennal space with small deep groove. Frontal tubercles small, subtriangular, slightly elevated above vertex, semiopaque, covered by microsculpture. Vertex densely covered by short pale hairs. Antennae slender, 0.80 times as long as the body, length ratio of antennomeres 1 to 11: 19:9:17:24:19:17:16:14:12:10:13.

Pronotum transverse, 2.05 – 2.25 times as broad as long, widest at the first third, narrowed anteriorly and posteriorly, dull, densely covered by coarse punctures and pale hairs. Surface with distinctly impressed median line, laterally with 2 large deep depressions. Anterior margin widely sinuate, posterior margin almost straight. Anterior and posterior margins thinly bordered, lateral margins indistinctly bordered. Anterior angles widely rounded, posterior angles obtusely angulate, rounded.

Scutellum small, widely subtriangular, apex widely rounded, with small dense punctures and short pale hairs, dull.

Elytra parallel, dull. Humeral calli well developed. Elytral surface very densely covered with small confused punctures and short pale hairs. Epipleura distinct, gradually narrowed to apex.



31-32. Aedeagus (a - dorsal view, b - lateral view): 27 - *Apophyllia sikkimensis*, 28 - *A. taiwanica*.  
Scale 1 mm

Macropterous.

Ventral surface lustrous, finely punctured and covered by pale hairs.

Basimetatarsomere 1.4 times as long as two following metatarsomeres combined.

Body length 5.25-7.75 mm (holotype 5.95 mm).

The shape of aedeagus as in Fig. 32.

Sexual dimorphism: Male: Last visible sternite with very large semicircular incision, claws bifid. Female: Last visible sternite with very small semicircular incision, claws appendiculate.

#### DISTRIBUTION

China: Taiwan.

#### DIAGNOSIS

*A. taiwanica* sp. nov. is externally identical with *A. asahinai* CHŪJŌ, 1962. Both species can be distinguished only by the structure of aedeagus (Figs 1, 32). *A. taiwanica* sp. nov. was previously published under the name *A. asahinai* by KIMOTO (1966; 1969). The schematic drawings of aedeagus in these papers undoubtedly refer to *A. taiwanica* sp. nov.

#### ETYMOLOGY

Named after Taiwan Isl. where the type series was collected.

#### ACKNOWLEDGEMENT

I would like to express my thanks to all curators and collectors listed above for the possibility of examining the extensive material. The above investigations were realized within the frame of the AF MZLU MSM 432100001.

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